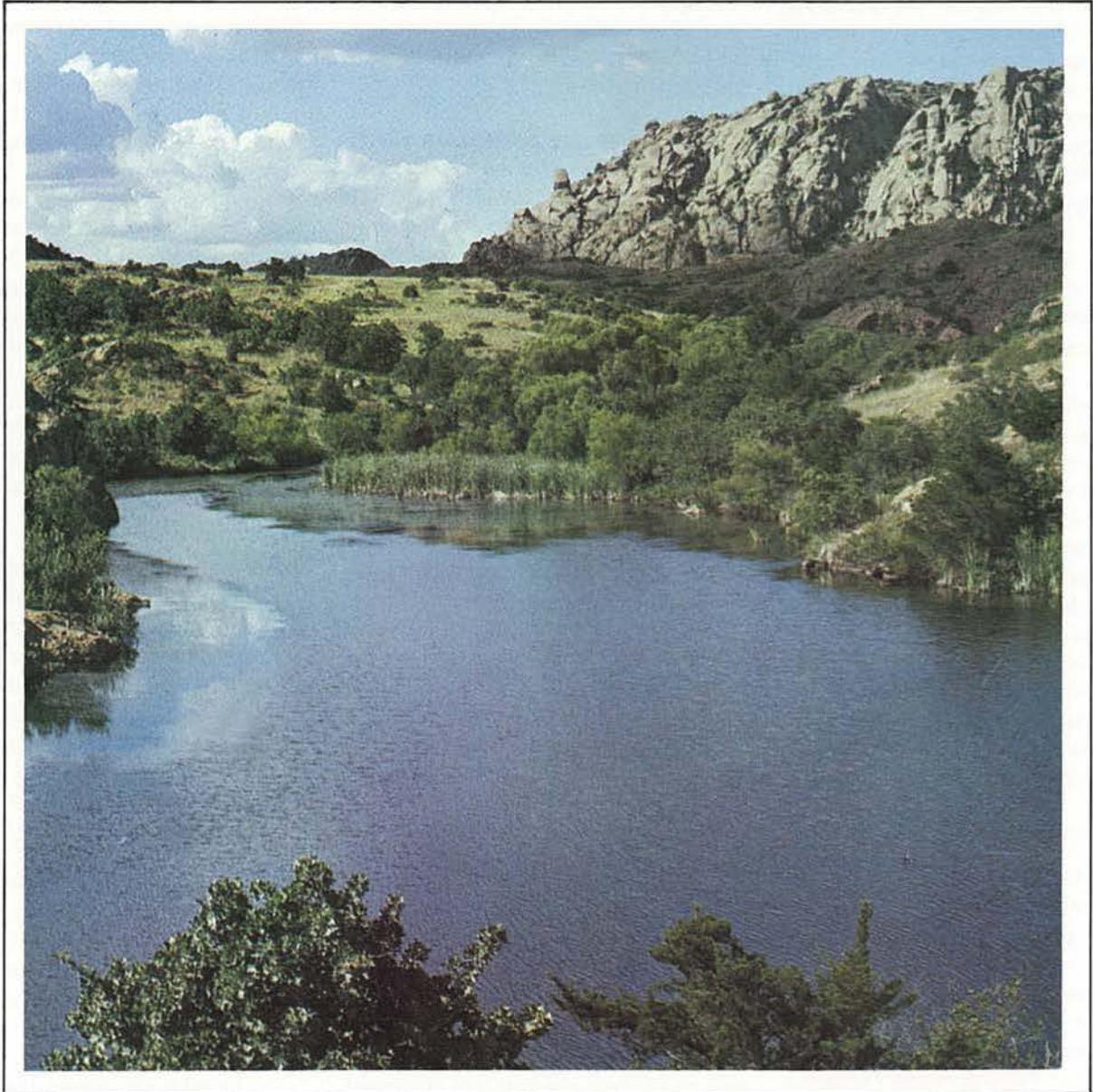


**CHAPTER VIII
CONSIDERATIONS RELATED
TO FUTURE DEVELOPMENT**



FINANCING WATER RESOURCES DEVELOPMENT

The timely and orderly implementation of the Oklahoma Comprehensive Water Plan will require financial support from federal, state, local and private sources.

As Oklahoma has traditionally relied on the private sector as well as the Federal Government for financing large-scale water projects, so should the state again seek federal funding if it is determined to go forward with the development and construction of a statewide water conveyance system and the Regional Plans of Development. However, federal money is increasingly difficult to secure and generally has stringent controls attached to its use. In addition, the new National Water Policy currently endorses increased cost-sharing by the states.

In light of these national trends, Oklahoma must assume responsibility for providing support at the state and local levels regardless of the nature or extent of federal participation. The state should be prepared to make a substantial investment in a timely fashion if adverse economic consequences are to be avoided. Local interests must make a commitment for their share before Congress can be expected to authorize and fund those elements of the system which qualify under federal criteria.

Federal Financing Sources

ENVIRONMENTAL PROTECTION AGENCY (EPA)

The Environmental Protection Agency, an independent administrative agency, is authorized to participate in the funding of water improvement facilities under the provisions of the Federal Water Pollution Control Act and subsequent amendments. Title II of the Act authorizes up to 75 percent of the cost of construction of a community's water treatment works, and up to 85 percent of certain special projects such as those which will result in substantial cost or energy savings.

Such grants require compliance

with stringent federal guidelines and the preparation of planning, engineering and environmental impact reports. A priority list determines which projects are funded each year on the basis of relative need and benefits. Each year \$75 million is available nationally for the funding of water treatment projects, so EPA is a viable funding source if a city or town is persistent and patient enough to fulfill the multiple requirements for participation.

FARMERS HOME ADMINISTRATION (FMHA)

Since 1963 the Farmers Home Administration of the U.S. Department of Agriculture has made available to small towns and rural areas in Oklahoma grants and loans for water supply and waste disposal projects. To qualify for FMHA financing a community or rural area must have a population under 10,000.

FMHA provides loans at five percent interest for periods up to 40 years, a rate extremely attractive to eligible applicants in today's financial market. Grants are also available in amounts up to 50 percent of project cost.

Since implementation of the funding program FMHA has made 968 loans totaling over \$172 million; and grants totaling almost \$39 million in Oklahoma. FMHA officials estimate they have financed projects serving 331,684 Oklahoma families.

As a result of the many requests to FMHA, processing can cause a long delay, during which rapidly escalating construction prices can cost the applicant community additional and often unavailable monies. However, no other reasonable financing alternative has existed for many towns and rural water districts, so they must wait until their projects are approved or seek interim financing.

HOUSING AND URBAN DEVELOPMENT (HUD)

The Department of Housing and Urban Development is authorized under the Housing and Community Development Act, as amended, to provide block grants for urban renewal,

water and sewer projects, neighborhood development and construction of public facilities.

The program receives funds from annual Congressional appropriations, and is intended to provide adequate housing, a suitable environment and expanded economic opportunities for low-income groups. Since an adequate water supply is fundamental to the accomplishment of these objectives, water and sewer projects are often awarded priority.

Generally 80 percent of the funds available is earmarked for Standard Metropolitan Statistical Areas (SMSA's — cities of at least 50,000 population and urban counties of 200,000 or more) and 20 percent for nonmetropolitan areas. Since there are only three designated SMSA's in Oklahoma, it is unlikely that the state will receive a significant share of HUD funds. However, communities which qualify should consider seeking financial assistance for their water projects through this program.

OZARKS REGIONAL COMMISSION (ORC)

The Ozarks Regional Commission is a 5-state organization created to promote the economic development of Kansas, Oklahoma, Louisiana, Arkansas and Missouri. The Commission maintains an active grant program including assistance in financing water supply, distribution and treatment facilities.

Assistance from ORC is usually supplemental to other federal grants, with ORC allowing the primary federal agency to determine the project scope and funding. Conditions of ORC grants are that they create jobs and present a long-term economic benefit.

Legislation allows the Commission to finance up to 80 percent of project costs, but since funds stem from Congressional appropriations, ORC is forced to assess requests selectively to determine priority projects.

Many cities and towns in Oklahoma have been recipients of ORC grants, and others should seek the

Commission's assistance, particularly if supplemental funds for another federal grant are needed. During the 1978 fiscal year ORC awarded \$2 million for projects in Oklahoma.

BUREAU OF RECLAMATION

The Bureau of Reclamation, an arm of the Department of Interior, is authorized under the Small Reclamation Projects Act of 1956, as amended, to make loans and grants in the 17 western states and Hawaii. Eligible projects must be either for irrigation or of a multipurpose nature. The maximum loan and/or grant is limited to two-thirds of a maximum allowable total project cost, which has been established at \$29 million for fiscal year 1979.

Although many Oklahoma communities and rural water districts are eligible, no loans or grants under this program have been made in the state. The \$1,000 application fee may discourage some potential participants, but if the communities could supply the fee, the financial assistance available through the Bureau of Reclamation should be of significant benefit.

ECONOMIC DEVELOPMENT ADM. (EDA)

The Economic Development Administration of the U.S. Department of Commerce makes available to communities grants and loans to promote industrial growth and development. Grant assistance up to 50 percent of the total eligible cost is provided, while long-term loans are made available at a rate established by current federal borrowing costs. EDA assistance is predicated upon budget limitations, since funding amounts depend on Congressional appropriations.

Although EDA assistance is intended to encourage industrial development, the recognition of the critical importance of an adequate water system to industrial growth should justify EDA's consideration of a community water project.

304 PROGRAM

A 1974 amendment to the Public

Works and Economic Development Act established Section 304 which provides federal funds to be apportioned among states for use in supplementing or making certain grants and loans. Oklahoma's annual apportionment is approximately one-half million dollars.

A state contribution of at least 25 percent of the amount of funds used per project is required. The Oklahoma Legislature appropriates funds to the Department of Economic and Community Affairs to meet this matching requirement. However, the decision to use Section 304 funds is at the discretion of the Governor, providing all federal conditions are satisfied.

Use of these funds must be consistent with the state economic planning process, which stresses direct job creation and the leverage of additional public and private investments. Water supply, storage and distribution facilities may be involved in such efforts.

In 1979 the Oklahoma Legislature appropriated \$68,000 toward the funding of 10 projects.

Local Financing

Communities generally have two options in generating local funds for water resource development: issuing municipal bonds or notes (either revenue or general obligation) and generating sales tax monies. A community should consider all these methods and choose the one or combination appropriate to local conditions.

MUNICIPAL BONDS OR NOTES

The tax-exempt status of municipal bonds makes them attractive to investors. The principal types of municipal bonds that have been used in the past are revenue bonds or notes and general obligation bonds. General obligation bonds are secured by the municipality pledging its full faith, credit and taxing power for payment of the bonds. All municipal general obligation bonds must be approved by a vote of the taxpayers.

The Oklahoma Constitution and

Statutes limit the general obligation indebtedness of municipalities to five percent of the net assessed valuation for all nonutility-type improvements (10 percent if an absolute need exists), but place no legal limit on municipal indebtedness for utilities. Considered a utility, water systems are thus exempt from both the five and the 10 percent limit.

An alternate and often highly attractive means of financing water systems is by the sale of revenue bonds or notes, a type of municipal bond secured by a mortgage of all project-related properties and a pledge of the completed facility's earnings. Although Oklahoma law prohibits municipalities from issuing revenue bonds or notes directly, this method is legal for public trusts or authorities established by municipalities for that purpose.

The feasibility of issuing revenue bonds or notes depends on the ability of the facility's revenues to retire the bonds or notes and to pay operation and maintenance costs. The pledge of the project's revenues, plus the legal right to make an assessment against the property, give the bonds an advantage in the bond market.

A community or group of communities interested in funding a water project typically forms a public trust for the issue of bonds or notes, and subsequently retires them through revenues from the sale of water to residents and local industries. Although revenue bonds are a higher risk investment than general obligation bonds, many issues are currently rated as exceptional investments.

Securing voter support for a general obligation bond election may prove difficult. In some instances revenues from the facility can be placed in the sinking fund to be used to retire the bonds. If sufficient revenues are paid into the sinking fund, local taxpayers have no additional tax assessment — sometimes an attractive selling point for general obligation bond issues.

SALES TAX

If a city is collecting sales tax revenues beyond those necessary to maintain existing obligations, a portion of these taxes can be earmarked for community improvements. If not, the city can vote an additional sales tax levy to be applied toward a specific project or purpose. In either case, the revenue from sales tax can be applied toward retiring general obligation bonds or revenue bonds or notes.

Recent reticence on the part of taxpayers to further assess themselves indicates that communities may choose to rely on taxation as a financing mechanism only after all other alternatives have been eliminated.

State Financing

Many Oklahoma communities have been deprived of adequate water supplies because an appropriate funding mechanism was not available to them. A program of financial assistance is now available through Title 82 O.S. 1979, Section 1085.31, et. seq. (Senate Bill 215 of the First Session of the 37th Legislature). This legislation is designed to provide cities, towns and rural water districts with the funding necessary to construct water storage projects, distribution systems and treatment facilities. It authorizes the Oklahoma Water Resources Board to issue investment certificates in the form of revenue bonds and to establish a Water Resources Fund from the bond proceeds. The Board is authorized to loan money from this fund to qualified entities for the development or expansion of local water projects. Program guidelines describe qualified entities as all political subdivisions of the state, special-purpose water resource districts and public trusts or authorities.

Revenues from the completed project will be used to repay the loan, and the Board will retire the bond issues from repayments. The legislation, effective October 1, 1979, sets no limit on the amount of bonds to be issued, but places a \$1.5 million ceil-

ing on each loan. Funding from the program may be utilized in the acquisition, improvement, extension or construction of dams, reservoirs and other water storage projects; water distribution facilities; and filtration and treatment plants. It is the stated intent of the legislation to make funds available for the development of adequate water supplies to all Oklahoma communities experiencing water quantity or quality problems.

Although the financial assistance program is an innovative step toward the accomplishment of local water development goals, certain provisions hinder the potential effectiveness of the legislation. Specifically, the \$1.5 million ceiling prevents the program from financing a major reservoir project. In order for the program to finance the comprehensive development necessary to meet the state's long-range water requirements, the ceiling must be raised substantially. Present provisions of the loan program allow for the achievement of only short-term goals. As these needs are fulfilled, enhanced funding levels should be considered by the Legislature if the state and regional water development projects of the scope necessary for implementation of the Oklahoma Comprehensive Water Plan are to be undertaken.

STUDIES AND RESEARCH

Continued Water Planning Studies

Inadequacies in funding and personnel have and will continue to limit the Oklahoma Water Resources Board in fulfilling its duties and responsibilities regarding future water development in Oklahoma. The Board staff is unquestionably too small to accomplish the immense task of developing, updating and implementing a state water plan. Water planning is expensive, so increased financial support for the Board is also essential. Unless the state is prepared to pay the cost, it must accept the probability that future goals cannot be effectively and efficiently achieved. Further,

without sufficient funding appropriated for planning efforts, other states will have an advantage in obtaining any available federal monies.

In addition, increased appropriations are needed to allow for expansion of the basic data collection programs upon which planning efforts rely. These include well measurement programs, hydrologic studies of ground water basins and stream systems and information on water quality.

Water resources planning must take a multidisciplinary approach, requiring a professional staff of economists, engineers, geologists, hydrologists and biologists. The planning capabilities of the Oklahoma Water Resources Board must be increased in order to maintain and attract the professionals necessary to update and implement the Plan effectively. In addition, reliance on federal planners could be substantially reduced if the Board were adequately staffed.

The long lead time necessary for planning water projects of the magnitude described in this plan makes it imperative that the state begin now to adequately fund the appropriate planning studies.

Research

Research provides the information necessary to formulate appropriate planning techniques. Additional research is needed to develop new techniques and programs for more effective utilization of existing data, and to increase general knowledge of present resources. Continued research will aid in overcoming the problems of resource development. The research programs which have been initiated should be expanded, including studies on the interdependence of ground and stream waters, their use and replenishment, and the relationship of ground water systems to the factors that influence them. Understanding return flows, natural and artificial recharge, conservation practices and wastewater reuse and their effects will insure the most effi-

cient use of water resources. Continued investigations related to flood control, weather modification, evaporation minimization, seepage control and stream water appropriation could also contribute to improved water planning.

Research relying on computerized models to simulate the hydrologic behavior of ground water and stream water systems is needed to determine the effects of various alternatives without physically implementing them. Thus a wider array of alternatives can be considered in the development of future plans. Further water quality research on desalinization, reduction of nutrient content in runoff, industrial waste treatment and urban runoff effects is necessary if further degradation of the state's water resources is to be prevented.

Oklahoma boasts a variety of outstanding research programs, primarily at the state's two major universities. The Oklahoma Water Resources Research Institute at Oklahoma State University, primarily funded by the Office of Water Research and Technology of the the Department of Interior, annually sponsors a variety of scientific studies. These studies emphasize research designed to address practical problems encountered in water resource planning and development. In addition, the College of Business Administration and Department of Agricultural Economics at OSU have been involved in water-related research, particularly in the area of economics.

The Bureau of Water and Environmental Resources Research at the University of Oklahoma is involved in numerous research programs, including the development of sophisticated computer models to project future water needs. The Center for Economic and Management Research has also conducted water-related research.

The continued funding of the various programs at both universities is vital. The wide range of expertise available from the academic community must continue to be utilized if

water resource development is to progress.

Data Collection

Accurate and complete data are necessary in formulating any plan, particularly one of the scope of the Oklahoma Comprehensive Water Plan. Appropriate information must be collected on a regular and long-term basis to provide a complete range of alternatives.

The dynamic nature of hydrologic systems requires programs to monitor their reactions to man's activities. Changes generally occur gradually, sometimes requiring years of careful monitoring to detect particular trends. Detailed data on climate, water well levels and streamflow give direction to planning, project design and regulation. The Oklahoma Water Resources Board cooperates with the U.S. Geological Survey in a statewide program to collect stream water and ground water quality and quantity data.

Hydrologic studies of each significant ground water basin, begun in 1967, collect data on water levels, water quality and saturated thickness which are correlated, analyzed and mapped to determine maximum annual yields. Ground water management programs can then be implemented where appropriate.

Recent water quality problems reported by many Oklahoma towns which rely on ground water for water supplies emphasize the need for more complete quality data.

Hydrologic studies of state stream systems are underway to determine the quantities of water available for appropriation. Data on deficient and surplus streamflows must also be collected, especially on the critically deficient stream systems in western Oklahoma.

To aid in the accumulation and dissemination of water-related data, the Oklahoma Water Resources Board is participating in the U.S. Geological Survey's National Water Use Program. This program is designed to develop a comprehensive statewide water use data inventory. It

will include the documentation of the sources of water supply, where the water is being used, how it is being used, and how much is being consumed or delivered to others. The inventory will acquire current data and develop a data base and procedures for the continual collection, storage and retrieval of data. The overall objective of the program is to establish a system which will provide maximum accessibility of information to support planning, development, management, conservation and protection of our water resources.

Presently, data on different aspects of water use are available from various local, state and federal agencies. During FY 1980, with guidance from a Water Use Task Force, the Oklahoma Water Resources Board will evaluate Oklahoma's existing water use data collection programs and available storage and retrieval systems in order to develop a comprehensive water use data work plan. This work plan will outline the necessary tasks leading to implementation of the system in the spring of 1981.

Interstate Cooperation

In an attempt to explore all feasible solutions to maximize water development in the state, Oklahoma must consider the appropriateness of cooperating with surrounding states in the development of a regional water transport plan. Several federal and state studies presently underway are being assessed and Oklahoma's role in them should be analyzed prior to considering an interstate cooperative approach.

There has been an effort by the State of Texas to expand its state water planning to a regional basis including Arkansas, Louisiana, New Mexico and Oklahoma. The Texas Department of Water Resources, responsible for planning the development of that state's water resources, is currently developing a conceptual plan for the delivery of water from Arkansas to the water-deficient High Plains area. These studies indicate that the most feasible conveyance

route could be via the southern water conveyance system proposed in the Oklahoma Comprehensive Water Plan.

By joining with Arkansas, Texas and New Mexico to develop a regional water distribution system, it is possible that a more cost-efficient project could be designed and constructed which would serve Oklahoma's interests as well as those of other states. By joining with surrounding states to equitably use surplus waters, Oklahoma would be assured of being able to put to beneficial use the water resources flowing through and originating in the state.

Six-State High Plains — Ogallala Aquifer Area Study

In 1976 the Six-State High Plains-Ogallala Aquifer Area Study was authorized by Congress to assess the water problems in the High Plains states. Under provisions of Public Law 94-587 and funding provided by the Economic Development Administration (EDA), the \$6 million study is focusing on the rapidly depleting natural water and energy resources of the States of Oklahoma, Texas, New Mexico, Kansas, Colorado and Nebraska. The study with recommendations is scheduled for completion and submittal to Congress in July 1982.

The purpose of the study is clearly stated in the authorizing legislation as being "...to assure an adequate supply of food to the nation and to promote the economic vitality of the High Plains Region..." To fulfill this purpose, the study will assess various alternatives addressing the future water shortage problems of the High Plains area, including major interbasin water transfer plans.

The High Plains Study Area encompasses 225,000 square miles reaching from eastern New Mexico and the Panhandle of Texas and Oklahoma, northward through Colorado and Kansas, into southern Nebraska. See Figure 126. Much of the area is underlain by the Ogallala Formation, a major aquifer supplying water to the area's large agricultural economy



**FIGURE 126 STUDY AREA
SIX-STATE HIGH PLAINS—OGALLALA
AQUIFER AREA STUDY**

Due to low rainfall, irrigated agriculture in the region has increased dramatically during the last three decades. The region produces irrigated crops valued in excess of \$2 million annually, 10 percent of the U.S. receipts from crops; and supports a \$10 billion annual livestock production which supplies 40 percent of the nation's fed beef market. Recently declining water tables threaten to return the region to dryland farming and thereby to inflict severe economic consequences on the entire nation.

The study is being directed by the High Plains Study Council which is composed of the governors of the six states, their designees and a representative of the Economic Development Administration. In September 1978 the Council selected

Camp Dresser and McKee, Inc. as prime contractor and coordinator of the Study, with Black and Veatch as joint venturer, and Arthur D. Little, Inc. as a major subcontractor. The Corps of Engineers received funds to evaluate alternative water transfer plans to meet future water needs of the study area, including the interstate transfer of water from sources within and outside the study area.

State involvement in the study was considered essential, with Congress allocating \$2 million of the \$6 million total to the states for state-level research. To date, each state has received \$300,000 to conduct three elements of the High Plains Study: State Agricultural and Farm-Level Research, Energy Production Impacts and State Water Resources Evaluation and Impact Research, with the

remaining \$200,000 being held as a contingency fund.

The Oklahoma Water Resources Board has been designated by the Governor to act as Oklahoma's lead agency to accomplish the state research elements. The Board has subcontracted with the Department of Agricultural Economics at Oklahoma State University and the Center for Economic and Management Research at the University of Oklahoma to conduct the Agricultural and Farm-Level Research and the Energy Production Impacts, respectively. The Board will complete the Water Resources Evaluation and Impacts Research.

Much of the work on the Oklahoma Comprehensive Water Plan complements the EDA High Plains Study, and their coordination is imperative. The High Plains Study and its final recommendations could be of great importance to Oklahoma due to its regional approach to water development, which could eventually prove to be the most feasible means for the state to address its water distribution problems also.

Statewide Economic Impact Study

The water transfer component proposed in the Oklahoma Comprehensive Water Plan will have numerous direct and indirect economic benefits for all Oklahomans. The identification of total economic benefits is of extreme importance, and such benefits should be assessed in relation to the cost of the water transfer plan in order to determine its economic feasibility.

Under federal planning guidelines only primary benefits may be recognized, however, the forward and backward linkage or indirect effects of additional water supplies are also very important and must be considered in order to have a meaningful economic analysis. Such a statewide economic impact study assessing total economic benefits is essential in order to make an intelligent decision on whether or not to pursue a water transfer plan. Recognizing this need, the Oklahoma Legislature authorized

and funded a study by the Oklahoma Water Resources Board, and the Board contracted with Oklahoma State University and Oklahoma University to assess the statewide economic impact of a water transfer system. The study will utilize several sophisticated computer models to assess the economic impacts on the state without water transfer and with water transfer. The \$277,633 study cost will be provided by state appropriations and federal matching grants and is scheduled for completion by January, 1981.

The Center for Economic and Management Research (CEMR) at Oklahoma University is the coordinating agency and prime contracting unit for the study. The Department of Agricultural Economics and College of Business Administration at Oklahoma State University have been subcontracted to prepare a portion of the study, with each of the three research groups responsible for developing specific models which will be interrelated.

The major objectives of the study are to evaluate the impact of future water shortages on the state and regional economic activity through the year 2040; to evaluate the direct and indirect benefits of the statewide water transfer system to the economy of the state through the year 2040; and to evaluate the direct and indirect benefits of the statewide water transfer system to the economies of areas outside the State of Oklahoma.

The determination and evaluation of economic impacts are of great importance in making a final decision regarding actual construction and operation of a water transfer system. However, the distribution of costs for such a system is equally important. Since preliminary results indicate that a water transfer system is not economically feasible under federal guidelines, the state must be prepared to consider assuming any costs exceeding federal financial limits. An analysis of this state cost is paramount to the acceptance of such an expensive undertaking. The State

Economic Impact Study will also include a State Net Benefits Analysis which will evaluate the distribution of costs on a regional level and identify the portion of costs attributed to nonresidents. Changes in the existing tax structure will be taken into account whenever possible to provide a more realistic breakdown of costs.

The study will not include a formal cost-benefit analysis of a transfer system. However, the economic impacts derived from the model and the costs provided by cooperating federal agencies should provide decisionmakers with information upon which to make competent choices.

Environmental Considerations

Environmental considerations reflect society's concern for and emphasis on the values of the natural environment. These considerations previously applied only to physical and biological systems, but now include such considerations as socio-economic impacts and possible disruption of archeological and historic sites. Environmental impacts from future resource development must be a part of overall water planning efforts.

The Oklahoma Comprehensive Water Plan contains a cursory assessment of environmental impacts anticipated in the construction of the proposed water transfer system. Although this assessment is only preliminary in nature, it does provide for the mitigation of and compensation for adverse effects on fish and wildlife habitats of the Plan's major construction programs.

Prior to construction of any major conveyance system, environmental impact statements more accurately assessing future impacts will be necessary. If a system is federally financed, the responsible federal agencies must conduct a detailed environmental impact study. If it were to be state funded, the appropriate state agency or agencies would make the environmental evaluation. Environmental considera-

tions include investigation of archaeological sites, biological studies to determine disruption of rare or endangered plants and animals, and planning to minimize aesthetic losses and displacement of families, farms, businesses and cemeteries.

Chloride Control Projects

Since 1957 the Federal Government has been studying methods to identify and control the natural salt pollution that renders the Arkansas and Red Rivers and many of their tributaries unfit for most beneficial uses. The U.S. Public Health Service and the Corps of Engineers cooperated to determine the source of the chlorides, and the Corps formulated several plans to eliminate and abate pollution from the natural salt emission areas.

Successful implementation of the proposed chloride control plans is essential to the Oklahoma Comprehensive Water Plan. Data from Chapter VI indicate that the northern water conveyance system alternative which assumes the projects to be operational and effective is somewhat less costly than the system without chloride control. Furthermore, efficient control of the salts would make additional sources of water available for local use.

The total estimated cost of the chloride control projects is \$632.8

million, based on 1978 price levels. The Corps of Engineers is currently engaged in an extensive reevaluation of project economics. Preliminary results of that analysis using current technology indicate that the project in the Arkansas River Basin may not be economically justified at this time. The projects in the Red River Basin, however, do appear justified and pre-construction planning is continuing. Construction has been completed on one control project in Texas, and initiated on another nearby.

Reinforced state support of the Corps of Engineers' authorized Arkansas-Red River Basin Chloride Control Project is vital to fulfilling the future water needs of Oklahoma. The state will have solved many of its future water problems when this improved water becomes available for beneficial uses. At such time, water of better quality will be available to eastern Oklahoma and a greatly expanded supply of good quality water will be close to western Oklahoma.

AUGMENTATION OF WATER RESOURCES

In the analysis of nontransfer alternatives included in Chapter I, the Oklahoma Water Resources Board has identified several methods to augment and/or prolong the state's water resources. Investigation of all

these means should continue, and although they may not individually or collectively produce sufficient quantities of water to fulfill the state's needs, they can supplement local supplies.

Additional research in the technologies of weather modification, artificial recharge, control of water-wasting vegetation and desalination should be encouraged. However, preliminary to their consideration as viable sources of water supply is an accurate determination of the amounts of supplemental water such measures would yield, which quantification should be a primary function of future planning efforts.

Water conservation, as discussed in Chapter III, remains another alternative worthy of emphasis. Wastewater reuse has emerged recently as an increasingly effective tool in the conservation of municipal and industrial water. In addition, the formation of water management districts is an integral part of any water conservation program, and therefore the foundation of any practical water transfer concept. It is the responsibility of the state to provide the leadership necessary to the organization and financing of individual or group efforts to conserve Oklahoma's precious water resources.